DOCUMENT RESUME

ED 130 722 JC 760 603

AUTHOR Schade, Herbert C.
TITLE A Comparison of Student Characteristics Between Two Academic Years, 1971-72 and 1974-75. Institutional Research Report 3-75.
INSTITUTION Crowder Coll., Neosho, Mo.
PUB DATE Jul 75
NOTE 31p.

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Community Colleges; *Comparative Analysis; Computer Programs; Demography; *Educational Trends; High School Graduates; Institutional Research; *Junior Colleges; *Junior College Students; Parental Background; Statistical Analysis; *Student Characteristics
IDENTIFIERS Crowder College

ABSTRACT

Statistical comparisons were made between twenty-three characteristics of students enrolled at Crowder College from two academic years, 1971-72 and 1974-75. The twenty-three characteristics were divided into three categories: personal information, high school information, and college information. A program was written (HP language) for automatic computation of the chi-square contingency test on the data by a programmable calculator. Results of the study indicated that students in 1974-75 were more likely than 1971-72 students to be older, married, living independently of their parents, not to be recent high school graduates, to be enrolled part-time, and in a career program. No significant differences were found on only 7 of the 23 characteristics, including sex distribution, previous college experience, and 1971-72 parental education background. It was concluded that Crowder College underwent many changes between the two academic years studies; part of the overall change was ascribed to the dramatic institutional growth over these years. The statistical program is appended. (JDS)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED130722

A COMPARISON OF STUDENT CHARACTERISTICS BETWEEN TWO ACADEMIC YEARS 1971-72 AND 1974-75

Crowder College
Neosho, Missouri 64850

Institutional Research Report 3-75

Herbert C. Schade
Director of Institutional Research

July, 1975

JC 760 603

ABSTRACT

Statistical comparisons have been made between student characteristics from two academic years. Students enrolled at Crowder College, Neosho, Missouri, during the 1971-72 and 1974-75 academic years were examined. Twenty-three compatible characteristics, divided into personal information, high school information, and college information, were examined with chi-square contingency tests. The null hypothesis that was tested was: There was no significant difference between the number of students who exhibited specific characteristic responses during the 1971-72 academic year and the number of students who exhibited the same characteristic responses during the 1974-75 academic year. The results of these tests are provided in this report.

TABLE OF CONTENTS

ABSTRACT ii

List of Tables iv

I. Introduction 1

II. The Statistical Methodology. 2

III. The Statistical Analysis 4

A. Personal Characteristics 4

B. High School Characteristics. 14

C. College Characteristics. 16

IV. Conclusion 23

V. Acknowledgement. 24

LIST OF TABLES

I. Sex 4

II. Age Group 5

III. Marital Status 5

IV. County of Permanent Residence 7

V. District Residence 7

VI. Temporary Residence 8

VII. Paternal Education 10

VIII. Paternal Education, College and Non-College Level 10

IX. Maternal Education 11

X. Maternal Education, College and Non-College Level 11

XI. Parental Education at the High School Level or Less 12

XII. Parental Education at the College Level 12

XIII. 1971-72 Parental Education Comparison 13

XIV. 1974-75 Parental Education Comparison 13

XV. High School Graduation Date 14

XVI. Sources of High School Diplomas 15

XVII. District High School Graduates 15

XVIII. College Class 17

XVIX. College Work Load 17

XX. College Experience 19

XXI. Previous and No Previous College Experience 19

XXII. Payment of Expenses 20

XXIII. College Degree Program 20

XXIV. No Responses 22

I. Introduction

During the past one and one-half years, several institutional research studies have been done at Crowder College. The purpose of these studies was to obtain information which could possibly be used in analyzing the various programs at the College. Concentrating primarily on the most important segment of any educational establishment, the student body, these studies have examined such areas as general student characteristics, transfer success at regional institutions, and characteristics of the graduates from this school.

Two studies have dealt solely with student characteristics. The first was concerned with those students enrolled during the 1972-73 academic year.[1] In this case a percentage analysis was performed for each characteristic, based on sexual and college class divisions. The second one was broader in scope, in that it covered three academic years; 1969-70, 1971-72, and 1974-75.[2] The primary purpose was one of compilation in terms of sexual and college class distributions rather than a detailed analysis.

This report carries the student characteristic research process one additional step. In the previous studies, any analysis performed dealt with characteristics for only a single year. The purpose of this study will be to perform interannual comparisons between several characteristics. With these tests, it should be possible to determine whether or not the students who have enrolled at Crowder College have exhibited significant changes over the past few years.

---

1. H. C. Schade, "A Compilation and Preliminary Analysis of the 1972-73 Student Characteristics," Crowder College Institutional Research Report 1-74, August, 1974.

2. H. C. Schade, "A Compilation of Student Characteristics for Three Academic Years: 1969-70, 1971-72, 1974-75," Crowder College Institutional Research Report 2-75, July, 1975.

II. The Statistical Methodology

The raw data for this study had been compiled as a part of one of the previous student characteristics reports.[3] Since comparisons were desired over as large a time interval as was practicable, the academic years of 1971-72 and 1974-75 were chosen. Earlier data were available for this study, (i.e. 1969-70) however, the specific student characteristics requested in the past had been in a state of flux. There were twenty-three compatible characteristics between 1971-72 and 1974-75, while there were fewer compatible characteristics between 1969-70 and 1974-75. So, the years which offered the more extensive comparisons were chosen.

The twenty-three characteristics examined were divided into three areas: personal information, high school information, and college information. The personal information characteristics included sex, age group, permanent and temporary residence, marital status, and parental education. There were two high school characteristics, the institution granting the diploma and the graduation date. Five characteristics were included in the college information subset. They were: class, academic work load, previous college experience, payment of college expenses, and degree program. The characteristics were subdivided, ranging from three to nineteen responses, including no response.

Comparisons were made between those students who exhibited a specific response on each characteristic for the two academic years. The chi-square contingency test was used to make these statistical comparisons. The statement of null hypothesis was: There was no significant difference between the number of students who exhibited specific characteristic responses during the 1971-72 academic year and the number of students who exhibited the same characteristic responses during the 1974-75 academic year. A significance

---

3. Ibid.

level of $\alpha=0.1$ was chosen for the tests which corresponds to a 90% confidence level. The no responses for the characteristics were analyzed separately.

The data and results of each characteristic's test are distributed in tabular form throughout this report. The characteristic responses are listed vertically. For each academic year, the number and percentage of students who exhibited that characteristic response are shown horizontally. The percentage statistics apply to the percentage of the total student body who responded to the particular characteristic survey question. The results of the chi-square test are shown below each table. These include the calculated chi-square value and the table value of chi-square. The ordered pair in parentheses with the table value of chi-square represents the values for the degrees of freedom and the significance level respectively.

The college's Hewlett-Packard Model 9820A Programmable Calculator was used for the computations. A program was written to perform a chi-square test on any n row by m column contingency table. There is a maximum limit of $nm=165$ elements on the contingency table. The Yate's correction factor is used for calculations with two by two tables. The input for the program consists of the number of rows, the number of columns, and the observed data on a row by row basis. The program output is also produced on a row by row basis. The observed data, the expected data, and the value of chi-square for each element are shown. In addition, the calculated value of chi-square for the test and the value of the degrees of freedom are included as output.

III. The Statistical Analysis

A. Personal Characteristics

The results from the sex comparison test are shown in Table I. There was no significant difference between the sexual populations for the two years; therefore, the null hypothesis was accepted. It is interesting to note that the 2:1 ratio of males to females had been maintained for several years. However, a more nearly equal ratio between the sexes had been observed in an earlier year (1969-70). It is not known whether these later imbalances reflected a perceived lack of educational opportunities for females at Crowder College, or if they reflected a simple tradition of females halting their education with a high school education in order to pursue domestic matters. Perhaps these questions could be answered by surveys at the high school level.

TABLE I: SEX

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Male	356	66	665	66
2. Female	186	34	349	34

$\chi^2 = 0.0003$

$\chi^2(1,0.1) = 2.7055$

No significant difference

Table II shows the results of the age group comparisons. There were significant differences between the populations of the six age groups. The null hypothesis was rejected for this characteristic. These results reflected the observation that the average age of students enrolled at the College had increased during the past few years.

TABLE II: AGE GROUP

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. 17 or less	61	12	69	7
2. 18 to 21	354	68	462	46
3. 22 to 25	55	11	133	13
4. 26 to 29	10	2	86	9
5. 30 to 34	12	2	107	11
6. 35 or over	25	5	154	15

$\chi^2 = 130.0000$

$\chi^2(5,0.1) = 9.2364$

Significant difference

TABLE III: MARITAL STATUS

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Single	402	77	551	54
2. Married	118	23	462	46

$\chi^2 = 75.7413$

$\chi^2(1,0.1) = 2.7055$

Significant difference

In 1971-72, 78% of the students were 21 years of age or less. This percentage had slipped to 53% during the 1974-75 academic year. Older students have made up the bulk of the increase in new students who attended the school in 1974-75. Some of the possible reasons for their attendance included veteran benefits, economic recession, and the various adult outreach programs maintained by the College. As the veteran programs end and as the economy picks up, the average student age can be expected to drop, that is, unless new sources of adult students are identified and tapped.

The characteristic dealing with marital status seemed to reflect the age group comparisons. These results are shown in Table III. There was a significant difference in the number of married and single students between the two years. The null hypothesis was rejected for this characteristic. Just as the percentage of students who were 21 years of age or less went from 78% to 53%, the number of single students dropped from 77% to 54%. Therefore, the data show the seemingly obvious correlation between age and marital status.

The results of the county of permanent residence comparisons are shown in Table IV. There was a significant difference between the populations of the geographical areas from which Crowder College draws its students. Therefore, the null hypothesis was rejected. In 1971-72, 72% of the respondents were from the junior college district. This figure rose to 78% during the 1974-75 academic year. A statistical comparison in terms of in-district and out-of-district students showed that this was a significant increase. These results are shown in Table V. The bulk of the in-district student increase seemed to be from McDonald county. As can be seen from Table IV, there was a large numerical increase, as well as a percentage increase. The populations from the other geographical areas also showed numerical increase. However, they did exhibit small percentage declines.

TABLE IV: COUNTY OF PERMANENT RESIDENCE

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Newton	298	57	534	53
2. McDonald	77	15	251	25
3. Jasper-Barry-Lawrence	62	12	88	9
4. Other Missouri	43	8	59	5
5. Other states	41	8	69	7
6. Foreign	0	0	9	1

$\chi^2 = 29.1818$

$\chi^2(5,0.1) = 9.2364$

Significant difference

TABLE V: DISTRICT RESIDENCY

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. In District	375	72	785	78
2. Out-of-District	146	28	225	22

$\chi^2 = 5.8712$

$\chi^2(1,0.1) = 2.7055$

Significant difference

There were significant differences in the housing patterns exhibited by the students during the two years examined for this study. The null hypothesis was rejected for this characteristic. As is seen in Table VI, the number of respondents who maintained their own home or apartment was quite small in 1971-72. Yet, by 1974-75, almost one-half of the respondents exhibited this response. These results would also seem to reflect the age characteristic. Forty-seven percent of the students were 22 years of age or older during the 1974-75 academic year. Therefore, it is not surprising that 46% of the students maintained their own home or apartment.

TABLE VI: TEMPORARY RESIDENCE

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Parents or Guardian	234	72	348	37
2. College housing	82	25	156	17
3. Own home or apartment	11	3	430	46

$\chi^2 = 196.8633$

$\chi^2(2,0.1) = 4.6052$

Significant difference

The final personal characteristics that will be dealt with are concerned with the highest educational level achieved by the student's parents. The results of the study dealing with the father's education are shown in Table VII. As can be seen in the table, there was a significant difference between the two populations regarding this characteristic. Therefore, the null hypothesis was rejected. However, these population changes seemed only to be a matter of degree. When the paternal education level was examined in terms of college attendance or non-college attendance, it was seen that there was no significant difference between the two academic years. The null hypothesis concerning this characteristic was accepted. College versus non-college education results

are shown in Table VIII.

There was also a significant difference shown in the distributions among the various educational levels attained by the mothers. Therefore, the null hypothesis was rejected. These results are shown in Table IX. However, the differences seem to be more substantial than those exhibited by the fathers. As is seen in Table X, there was a significant difference between the number of mothers who did and who did not attend college in the two years examined. Therefore, the null hypothesis was rejected. The respondent's mothers went from a 2:1 ratio of non-college attendance to non-college attendance at a 3:1 ratio.

The education characteristics offered a means of comparison between the student's parents. For the two academic years, the numbers of each parent who attended college and who did not attend college were compared. The results of the parental comparison at the non-collegiate level are contained in Table IX, while Table XII deals with parental comparisons on the college level. There was no significant difference between the numbers of either parent who attained only a high school education or less. Nor was there a significant difference in the numbers of either parent who attended college. Therefore, the null hypothesis was accepted for both characteristics. The parental educations were also examined on a yearly basis. During the 1971-72 academic year, there was no significant difference between the numbers of either parent who had been educated at either a college or non-college level. For both parents, an approximate 2:1 ratio of non-college to college education existed. The data from 1974-75 showed a significant difference between the numbers of either parent who had been educated at the college and non-college level. Therefore, the null hypothesis was rejected for this characteristic. It can be seen that a larger percentage of the mothers had no collegiate experience. The 1971-72 and 1974-75 results are provided in Table XIII and Table XIV respectively.

TABLE VII: PARENTAL EDUCATION

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Elementary	33	17	286	30
2. Some high school	23	11	148	15
3. High school diploma	82	41	278	29
4. Some college	33	17	147	15
5. Associate degree or Certificate	0	0	21	2
6. Bachelor's Degree	19	9	46	5
7. Master's Degree	7	4	16	2
8. Doctorate	3	1	18	2

$\chi^2 = 34.0972$

$\chi^2(7,0.1) = 12.0170$

Significant difference

TABLE VII: PATERNAL EDUCATION, COLLEGE AND NON-COLLEGE LEVELS

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. High school or less	138	69	712	74
2. College	62	31	248	26

$\chi^2 = 2.0002$

$\chi^2(1,0.1) = 2.7055$

No significant difference

TABLE IX: MATERNAL EDUCATION

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Elementary	15	7	169	18
2. Some high school	33	16	159	18
3. High school diploma	93	46	394	43
4. Some college	41	20	123	13
5. Associate Degree or Certificate	2	1	27	3
6. Bachelor's Degree	15	8	37	4
7. Master's Degree	5	2	10	1
8. Doctorate	0	0	2	0

$\chi^2 = 27.2410$

$\chi^2(7,0.1) = 12.0170$

Significant Difference

TABLE X: MATERNAL EDUCATION, COLLEGE AND NON-COLLEGE

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. High school or less	141	69	722	78
2. College	63	31	199	22

$\chi^2 = 7.5318$

$\chi^2(1,0.1) = 2.7055$

Significant Difference

TABLE XI: PARENTAL EDUCATION AT THE HIGH SCHOOL LEVEL OR LESS

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Father	138	49	712	50
2. Mother	141	51	722	50

$\chi^2 = 0.0001$

$\chi^2(1,0.1) = 2.7055$

No Significant Difference

TABLE XII: PARENTAL EDUCATION AT THE COLLEGE LEVEL

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Father	62	50	248	55
2. Mother	63	50	199	45

$\chi^2 = 1.1344$

$\chi^2(1,0.1) = 2.705$

No Significant Difference

TABLE XIII: 1971-72 PARENTAL EDUCATION COMPARISON

Characteristic	Father N	Father %	Mother N	Mother %
1. High School or less	138	69	141	69
2. College Work	62	31	63	31

$\chi^2 = 0.0067$

$\chi^2(1, 0.1) = 2.7055$

No Significant Difference

TABLE XIV: 1974-75 PARENTAL EDUCATION COMPARISON

Characteristic	Father N	Father %	Mother N	Mother %
1. High School or less	712	74	722	78
2. College Work	248	26	199	22

$\chi^2 = 4.4041$

$\chi^2(1,0.1) = 2.7055$

Significant Difference

B. High School Characteristics

Three items were examined under the general classification of high school characteristics. They were: (1) the graduation date, (2) the institution granting the diploma, and (3) district graduates. The results of these comparisons are shown in Tables XV, XVI, and XVII respectively.

TABLE XV: HIGH SCHOOL GRADUATION DATE

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Previous spring	212	41	277	31
2. Earlier	303	59	619	69

$\chi^2 = 14.7226$

$\chi^2(1,0.1) = 2.7055$

Significant Difference

Table XV shows that there was a significant difference between the number of students who had recently graduated from high school and the number of students who had graduated prior to the previous spring. The null hypothesis was rejected for this characteristic. These results would seem to follow the observed characteristic of an older average student since the typical spring graduate from a high school is 18 or 19 years of age. However, these data include the sophomores as a minority group which would affect the statistical outcome.

There was a significant difference in the number of students receiving high school diplomas or their equivalent in the various institutional categories. The null hypothesis was rejected for this characteristic. There were numerical increases in each of the categories. However, only three of the categories showed percentile increases. These included students who had received their diplomas from other states, from foreign countries, and, under

TABLE XVI: SOURCES OF HIGH SCHOOL DIPLOMAS

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Neosho	130	25	225	23
2. East Newton	60	12	66	7
3. Seneca	33	6	47	5
4. Diamond	20	4	21	2
5. McDonald County	56	11	99	10
6. Other Missouri	129	25	197	20
7. Other States	73	14	201	21
8. GED	14	3	113	12
9. Foreign	3	0	9	1

$\chi^2 = 58.3363$

$\chi^2(8,0.1) = 13.3616$

Significant Difference

TABLE XVII: DISTRICT HIGH SCHOOL GRADUATES

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Neosho	130	43	225	49
2. East Newton	60	20	66	14
3. Seneca	33	11	47	10
4. Diamond	20	7	21	5
5. McDonald County	56	19	99	22

$\chi^2 = 7.0253$

$\chi^2(4,0.1) = 7.7794$

No Significant Difference

a GED program. The remaining divisions showed percentage decreases. The number of students graduating from the high schools in the College district were also examined. It was seen that there was no significant difference between the numbers of these graduates from the various schools during the two academic years. Therefore, the null hypothesis was accepted for this characteristic.

C. College Characteristics

A significant difference existed between the populations of the three college classes. The null hypothesis was rejected for this characteristic. The percentage of freshman students remained constant. The primary differences seemed to be in the sophomore and unclassified student populations. Both groups showed numerical growth over the time span. However, the sophomores sustained a percentage decrease while the percentage of unclassified students grew. The test results are shown in Table XVIII.

Results of the work load comparisons are shown in Table XIX. It can be seen that a significant difference existed between the numbers of full-time and part-time students for the two years. The null hypothesis was rejected for this characteristic. Although the majority of the student body were enrolled as full-time students (12 hours or more), the ratio of full-time to part-time students dropped from approximately 7:1 in 1971-72 to 2:1 during the 1974-75 academic year. This fact was reflected in the disparity between the numerical population and the F.T.E. population last year. When this result is coupled with the increased age of some of the students, perhaps a pattern of college attendance for personal growth is beginning to emerge. This examination was not available for the years covered by this study since no information regarding reasons for college attendance was requested in 1971-72. However, this comparison can be made in the future.

TABLE XVIII: COLLEGE CLASS

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Freshman	364	67	667	66
2. Sophomore	176	33	256	25
3. Unclassified	2	0	91	9

$\chi^2 = 50.5053$

$\chi^2(2,0.1) = 4.6052$

Significant Difference

TABLE XIX: COLLEGE WORK LOAD

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Full time	455	87	613	66
2. Part time	68	13	316	34

$\chi^2 = 74.8800$

DF = 1

$\chi^2(1,0.1) = 2.7055$

Significant Difference

Comparisons of previous college experience were made, and the results are shown in Tables XX and XXI. There was a significant difference in the number of students in the various experience categories. Therefore, the null hypothesis was rejected. It can be seen that the percentage of beginning freshmen remained practically constant. The percentage of returning students dropped, while the percentage of students who had been enrolled at Crowder College during earlier terms increased. When a comparison of no college experience versus some college experience was made, there was no significant difference. The percentage of returning students may increase during future terms, reflecting the larger beginning freshman class of 1974-75. The per-capita decrease in this group during 1974-75 are the results of the sudden numerical growth exhibited in new students at the college.

There was a significant difference in the number of students who utilized the financial aid programs at the college. The null hypothesis was rejected for this characteristic. Table XXII shows the results of this comparison. The greatest contribution to the financial aid differences seemed to come from the scholarship category. Most financial aid programs increased or at least maintained a constant growth during the time span studied. However, recipients under the scholarship program decreased from 31% to 19% of the respondents. The veteran program experienced the greatest growth. An increase of 24% from 16% of the respondents was noted. The grant programs were not included in this comparison since no grants were available during 1971-72.

The college degree program results are shown in Table XXIII. As is seen in the table, there was a significant difference in the number of students enrolled in the two degree programs at the College. The null hypothesis was rejected for this characteristic. These results were indicative of the growth of the vocational-technical programs during the past few years. Enrollments in these programs increased until there was approximate parity between the

TABLE XX: COLLEGE EXPERIENCE

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. First term	248	48	408	47
2. Attended last term	196	38	262	30
3. Transfer	39	7	103	12
4. Former Crowder student	38	7	99	11

$\chi^2 = 17.1894$

$\chi^2(3,0.1) = 6.2514$

Significant Difference

TABLE XXI: PREVIOUS AND NO PREVIOUS COLLEGE EXPERIENCE

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. No previous experience	248	48	408	47
2. Previous experience	273	52	464	53

$\chi^2 = 0.0568$

$\chi^2(1,0.1) = 2.7055$

No Significant Difference

TABLE XXII: PAYMENT OF EXPENSES

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Personal funds	219	45	464	48
2. Veteran law	80	16	233	24
3. Social Security	19	4	37	4
4. Vocational Rehab.	10	2	32	3
5. Scholarship	154	31	185	19
6. Loan	8	1	25	2

$\chi^2 = 34.2203$

$\chi^2(5,0.1) = 9.2364$

Significant Difference

TABLE XXIII: COLLEGE DEGREE PROGRAM

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Transfer	392	64	274	52
2. Career	184	36	252	48

$\chi^2 = 14.9714$

$\chi^2(1,0.1) = 2.7055$

Significant Difference

transfer and career degree programs. No compatible data were available to compare specific college major areas because of the increase in the number of programs since 1971-72. In addition, the format of the statistics cards had been changed, which hampered statistical comparisons.

The final characteristic to be examined in this report deals with the pattern of no responses to the various characteristics. To reiterate, all previous comparisons dealt only with those students who listed a particular response to the characteristics. However, it is possible that if the students who were reticent to respond had responded, different statistical outcomes might have occurred. There were at least three factors which could have caused a no response item. One is that earlier statistics cards were rather complicated in format which necessitated counselor help during completion. During the press of pre-registration and registration, this help might not have been forthcoming. A second factor could have been related to a lack of knowledge of the specific information requested. The third factor could have been shyness in responding to particular questions. To help alleviate these problems, and to gather more information, a new and expanded statistics card was designed for the 1974-75 academic year.

The results of the no response examination are shown in Table XXIV. Other than the percentage figures shown, no quantitative statistical comparison was made on these items. The number of students and the percentage of the total student body that this number represented for each year are shown in the table. Two groups, sex and college class, had a zero no response rate. This is because any statistics card which could not be identified in terms of these categories was not compiled. Several characteristics which were compared in this study were not included in the table. They were district residency, parental education comparisons, district high school graduates, and one of the previous college experience comparisons. They were part of other characteristics that were examined and duplication was deemed unnecessary.

TABLE XXIV: NO RESPONSE

Characteristic	1971-72 N	1971-72 %	1974-75 N	1974-75 %
1. Sex	0	0	0	0
2. Age Group	25	5	3	0
3. Marital status	20	4	1	0
4. Permanent residence	21	4	4	0
5. Temporary residence	215	40	80	8
6. Paternal education	342	65	54	5
7. Maternal education	338	62	93	7
8. Graduation date	7	5	118	12
9. High school	24	4	36	4
10. College class	0	0	0	0
11. Work load	19	4	85	8
12. Degree program	28	5	245	24
13. College experience	20	4	142	14
14. Payment	53	10	92	9

There did not seem to be any specific pattern in the no responses. The 1974-75 statistics exhibited an over-all lower no response rate than the 1971-72 data. Three characteristics in 1974-75 exhibited a 10% or greater no-response rate (up to 24%) while four characteristics in 1971-72 exhibited these rates (up to 65%). High no response rates for a given characteristic during one year were not reflected by high rates for the same characteristic during the other year.

IV. Conclusion

This study has shown that the student body of Crowder College underwent many changes between the 1971-72 and 1974-75 academic years. The null hypothesis was accepted for seven characteristics. Between the two years, there was no significant difference in the number of students who exhibited the various responses pertaining to the characteristics of:

1. Sex,
2. Paternal education at college and non-college levels,
3. Parents with no college background,
4. Parents with some college background,
5. 1971-72 parental educational background,
6. District high school graduates,
7. College experience.

There were sixteen characteristics for which the null hypothesis was rejected. Between the two years, there was a significant difference in the number of students who exhibited the various responses pertaining to the characteristics of:

1. Age group,
2. Marital status,
3. County of permanent residence,
4. District residency,
5. Temporary residence,
6. Paternal education,
7. Maternal education,
8. Maternal education at a college and non-college level,
9. 1974-75 parental education background,
10. High school graduation date,
11. Institution granting the high school diploma,
12. College class,
13. College work load,
14. College experience,
15. Payment of expenses,
16. College degree program.

To summarize, the institution grew dramatically between the 1971-72 and 1974-75 academic years. There was an increase in the number of older, married students, who maintained their own homes or apartments. The ratio between the sexes remained constant. The College drew increasingly larger numbers who lived in the district, but many of these students were not graduates of the local high schools. For the most part, students did not come from backgrounds in which their parents had gone to college. The type of college education that was being sought changed as the number of vocational-technical programs increased. Also, larger numbers of part-time and unclassified students were attending. Yet, the relation between some college experience and no college experience remained constant. Larger numbers of students were attending college under the auspices of the financial aid programs.

In some instances, the College had also changed during the years covered by this study. There were obvious differences, increased numbers of classes, increased class populations, and some new programs. In many cases, the College resources were further diluted to handle the increased number of students. In limited cases, new instructional techniques were developed for better pedagogy. With these changes, had the institution adapted sufficiently so that it could reflect the student differences between the two academic years? To be truly effective, a school will ask and try to answer that question.

V. Acknowledgement

The author acknowledges the assistance provided by Dr. Jerry Cavanaugh, Dean of Academic Instruction. Timely aid with writing style was gratefully accepted during the preparation of this report.

VI. Appendix

Program Listing for Chi-Square Contingency Test

(HP Language)

```
 0: PRT "CHI-SQUARE", "CONTINGENCY TEST"; SPC 2 ┣
 1: ENT "NO. OF ROWS", A, "NO. OF COLUMNS", B ┣
 2: 1→X→C ┣
 3: IF X>A; GTO 7 ┣
 4: 1→Y; 0→Z ┣
 5: If Y>B; Z→R(AB+X); X+1→X; GTO 3 ┣
 6: ENT "OBSERVED DATA", R(C); RC+Z→Z; C+1→C; Y+1→Y; GTO 5 ┣
 7: 0→X→Z→RO ┣
 8: IF X>B-1; RO→R(AB+A+B+1); GTO 15 ┣
 9: 0→Y ┣
10: IF Y>A-1; JMP 2 ┣
11: R(BY+X+1)+Z→Z; Y+1→Y; JMP -1 ┣
12: X+1→X ┣
13: Z→R(AB+A+X); Z+RO→RO ┣
14: 0→Z; GTO 8 ┣
15: 1→C→X→Y ┣
16: IF X>A; GTO 20 ┣
17: IF Y>B; 1→Y; X+1→X; JMP -1 ┣
18: R(AB+X)R(AB+A+Y)/R(AB+A+B+1)→R(165+C) ┣
19: Y+1→Y; C+1→C; GTO 17 ┣
20: 1→C→X→Y; 0→RO ┣
21: PRT "OBSERVED DATA", "EXPECTED DATA", "DATA CHI-SQUARE"; SPC 2 ┣
22: FXD 0;PRT "ROW", X; SPC ┣
```

```
23:  IF (A-1)(B-1)=1; (ABS (RC-R(165+C))-.5)↑2/R(165+C)→Z; JMP 2 ┤
24:  (RC-R(165+C))↑2/R(165+C)→Z ┤
25:  FXD 4; PRT RC,R(165+C),Z; SPC ┤
26:  Z+RO→RO; C+1→C ┤
27:  IF C≤AB; JMP 2 ┤
28:  PRT "TOTAL CHI-SQUARE", RO; FXD 0; PRT "DF", (A-1)(B-1); GTO 31 ┤
29:  IF B>Y; Y+1→Y; GTO 23 ┤
30:  X+1→X; 1→Y; GTO 22 ┤
31:  SPC 8; END ┤
```

UNIVERSITY OF CALIF.
LOS ANGELES

DEC 10 1976

CLEARINGHOUSE FOR
JUNIOR COLLEGES